purely physiological one. In the case of female patients put under this treatment there are sometimes, but not so frequently nor to the same extent, observed spurts of irritability and temper; but attacks of excitement, however mild, apart from these spurts, have not been noticed in any of the female cases. The mental aspect of the therapeutics of spleen extract is very interesting, and has yet to be worked out more fully.—*Medical Press and Circular*, 1898, No. 3068, p. 185.

Generalized Erythema Following the Ingestion of Calomel.—M. CAMESCASSE reports that an old woman, suffering from irregular heart-action resulting from a long-standing mitral insufficiency, received five doses of two-thirds of a grain of calomel at three-hour intervals on alternate days for a week. The drug was given with a small amount of sugar of milk in sweetened water. The patient was upon a milk diet, and received a simple clyster each morning. Moderate purgation and considerable diuresis ensued, with consequent diminution of anasarca and dyspnœa. Upon the day following the first day's use of the drug there was noticed a slight burning over the entire body, but especially over the face, neck, and hands. The second day redness appeared. At the end of the week the burning was atrocious, the entire surface of the skin was scarlet-red, violet in places, swollen, and thickened. The hairy-scalp remained uncolored. The palms and soles were less colored than the other surfaces, but yet were red. In a few days spontaneous cure appeared, but accompanied by an abundant and extraordinary desquamation which extended to the hairy scalp and to the mucous surfaces. First, large surfaces were detached, then small scales, and finally a whitish powder. This process lasted fifteen days, although the mucous surfaces were healed at an earlier period. There was not any elevation of temperature, nor did the redness of the mouth resemble a mercurial stomatitis.—*Bulletin Général de Thérapeutique*, 1898, 1e liv., p. 20.

The Value of Potassium Permanganate as an Antidote for Opium and its Alkaloid, Morphine.—DRS. E. Q. THORNTON and CHARLES A. HOLDER state that there are but three possible ways in which the antidote may overcome the poisonous effects of opium: 1. Chemically, by coming in contact with the alkaloids in the blood, and thereby oxidizing them. 2. By acting as a physiological antagonist. 3. Mechanically, by giving rise to severe pain, which follows the ingestion of potassium permanganate, thereby assisting in keeping the patient awake. The usual fatal dose of morphine, estimated according to the body-weight, was administered subcutaneously to six dogs, which resulted in their death in from two to three hours. In test-tubes two grains of potassium permanganate were required to reduce one grain of morphine, so that the amount of antidote was calculated on this basis. This was also administered hypodermatically, at periods ranging from a few minutes to an hour after the poison had been administered. Five dogs so treated died as promptly as those which had received no permanganate, nor did the poisonous effects of morphine appear in any way to be modified. One dog received less than a toxic dose of morphine, and, although followed by permanganate, it did not appear to modify in any way the usual non-toxic effects of morphine. Lastly, a large dose of potassium permanganate was given subcutaneously to a dog which had not received morphine; and, with the exception of the pain, which lasted about thirty minutes, the animal appeared to suffer no inconvenience, and recovered fully. These experiments lead to most serious doubt as to the efficacy of potassium permanganate as an antidote to opium or any of its alkaloids when hypodermatically injected.—*Therapeutic Gazette*, 1898, No. 1, p. 11.

Some Effects of Cannabis Indica in Large Dose.—DR. ROBERT C. BICKNELL regards as worthy of note the existence of muscular contractions, followed later by convulsive movements, evidently due to action of the drug on the spinal cord. Aside from acceleration of the pulse-rate and a feeling of fulness in the artery at the wrist, there was, just previous to the occurrence of unconsciousness, a sense of extreme tension in the abdominal blood-vessels; they felt distended almost to bursting. After some hours the urine was markedly increased in quantity. No constipation resulted. There was no foreboding nor fear of impending death.—*Therapeutic Gazette*, 1898, No. 1, p. 13.

Strychnine Poisoning.—DR. A. HUBEL reports that two hours after intentional ingestion of this drug he thoroughly washed out the stomach, gave strong coffee and ten drops of tincture of iodine every two hours. Later, he administered seventy-five grains of potassium bromide. Recovery followed. The notable conditions, aside from the usual symptoms, were in this instance the elevation of temperature on the first day, the retention of urine, and the appearance of blood and casts in it. The first is explained by the enormous activity of the muscles; the urinary retention by the spasm of the *sphincter vesicæ*. The blood and casts can be explained by the irritation which strychnine in large doses produces in the kidney. During convalescence the influence of strychnine upon metabolism was marked in that the chlorides and phosphates were markedly diminished at the commencement, but increased daily in amount, while the urea remained constant as in normal urine.—*Münchener medicinische Wochenschrift*, 1898, No. 1, S. 7.

Liquid Benzoin for Benzoinating Lard.—MR. RICHARD M. SHOEMAKER, noting that the benzoin of commerce is largely adulterated, macerates for twelve hours benzoin, 20, in ether, 40, filters, and dissolves castor-oil, 15, in the filtrate, from which the ether is carefully distilled. This oily product contains the benzoic acid and the volatile principles. To make benzoinated lard, white wax, 20, is melted by steam-heat with dehydrated lard, 965, to eliminate water; the above liquid, 15, is added and the mixture stirred until cold. In warm weather a larger amount of wax should be used.—*American Journal of Pharmacy*, 1898, No. 1, p. 9.

Electrotherapy in the Treatment of Certain Forms of Neurasthenia.—DR. G. APOSTOLI states that each method of using electricity will have its special indications and contra-indications. Speaking generally, local applications, whether of faradism or galvanism, should be second to the general, which may be static baths or baths of rapidly alternating currents. The more that neurasthenia is complicated by peripheral nervous trouble (such as hemianæsthesia of hysterical origin), the more serviceable will be the electric treatment, which gives local maximum of tension (static or franklinization). In the arthritic forms, on the other hand, when the nutritive processes are impaired, the currents influencing cellular activity or currents of high frequency are indicated. The choice of method for each patient is confirmed by the tolerance or intolerance of the patient, as shown by the progress of the treatment. The hysterics who show diminished cutaneous excitability are only suitable for static electricity. This bath, aided perhaps by the drawing of sparks from the spine, is well borne, and generally benefits. The hyperæsthetic hysterics need the same treatment, but in moderate doses of short duration and without practising revulsion (sparks). The arthritics, as well as others whose nutrition is defective, are generally very sensitive to static sparks, bear this treatment badly, but are benefited by treatment of high frequency. In neuro-arthritics both methods may be combined.—*Bulletin Général de Thérapeutique*, 1898, 4e liv., p. 148.

Antipyrin in the Treatment of Epidemic Influenza.—DR. L. LANDOUZY calls attention to the fact that this drug has its only indication in the relief of pain; further. that it is often harmful in the asthenic forms of this disease. It depresses the nervous system, lowers vascular tension, produces peripheral vaso-dilatation, destroys red blood-corpuscles in patients suffering from fever, diminishes oxidation, diminishes the quantity and solids of the urine, and, finally, lowers the urotoxic coefficient. These dangers are specially encountered in old persons, those suffering from arterio-sclerosis, cardiac disease, emphysema, or those who excrete albumin in their urine. Far preferable is quinine, which often relieves the pain in many instances and also stimulates and builds up these patients.—*La Presse Médicale*, 1898, No. 10, p. 57.

Results in the Treatment of Tuberculosis with Anti-tuberculosis Serum.—DR. E. A. DE SCHWEINITZ states that when tuberculin failed to give satisfactory results as a curative agent, attention was directed to the preparation of a serum on the same principle as the diphtheria antitoxic serum. Maragliano, Babes, Behring, and others prepared such a material for the treatment of tuberculosis by injecting tuberculin alone or in combination with virulent tubercle cultures. After long-continued injections of animals the serum obtained was claimed to have antitoxic properties, and when this serum was injected subcutaneously into tuberculous animals, together with a dose of tuberculin, the fatal effects or characteristic rise of temperature from the latter were counteracted. The strength of the serum was based upon the quantity necessary to prevent the tuberculin reaction. This method, however, did not fulfil all the conditions. In the first place, as tuberculin is prepared from the cultures of the germ it is subjected to such a temperature that some of the products of germ-life are changed or decomposed, and hence tuberculin as used does not represent the poisons of the tubercle germ as they are actually found in animals suffering from this disease. Consequently, a serum which counteracts the fever-producing properties of tuberculin does not necessarily exert a beneficial influence upon all phases of the disease in man. Assuming that, while it may not be possible to establish a perfect artificial immunity to tuberculosis in man, but that the disease may be checked by reinforcing the natural resistance which is always present, the effort has been made to secure in a slightly different way from the one above described a serum useful for treating tuberculosis. In the first place, it was found, if an originally virulent tubercle bacillus was cultivated for many generations upon artificial media, that, while it did not lose the property of producing active poisons when so cultivated, it did lose the property of producing tuberculosis in animals when the latter were injected. Furthermore, the animals, as guinea-pigs, after a time possessed a very marked resistance to tuberculosis when they were subjected to an inoculation with virulent tubercle bacilli that would cause disease and kill the checks in a month to six weeks. This attenuated germ seemed to offer suitable means for treating animals for the production of a serum with active properties, and was used in large quantities upon both cows and horses. The entire culture medium, including the germ, was at first used for these injections. As the toxins of the tuberculosis germ are, however, found to a large extent within the cell-wall, it seemed desirable to bring these into solution so far as possible and inject the animals with the extract. At the same time it should be advantageous to discard the excess of nitrogenous bases, glycerin and peptone, present in the culture media and unused by the germ. To accomplish this solution an ordinary milk-shake machine has been used. The live germs in quantity are transferred to the sterilized tumblers, and the liquid added which it is desired to use as a solvent. The whole is agitated as rapidly as possible until the cell-contents have been pretty well extracted. The residual germs can then be separated and submitted to the same process. This germ extract, as it may be called, containing the soluble products of the cells, is then used for injection. As the germs have not been submitted to a temperature above that at which they have been grown, this solution should contain the unchanged products of the cell life. This material is fairly well absorbed by the animals. The serum obtained by cows treated with a large amount of cultures had apparently little or no value in checking tuberculosis in experimental animals. The serum obtained from injected horses was at first without any apparent influence; but as their treatment progressed, and more and more germ extract was injected, the serum gradually acquired properties of value. When given to tuberculous guinea-pigs, together with tuberculin, the serum would usually retard or prevent the characteristic reaction, and in addition prolonged their lives for a number of months. These results seemed to warrant the use of the serum upon man. The results of the use of this serum in connection with general hygienic and climatic treatment only, as shown by the histories of thirty-four patients, were as follows: Physical signs improved in thirty; expectoration decreased in twenty-eight; temperature decreased in twenty-one; cough decreased in twenty-six; appetite improved in twenty-seven; tubercle bacilli disappeared in four, decreased in seven, and remained stationary in twenty; body-weight increased in twenty-four. Of these patients the disease was in the incipient stage in sixteen; moderately advanced in fifteen; and far advanced in three instances. These patients, compared with those treated in other ways, or under climatic influence only, showed that the improvement with the use of serum was more marked. A review of the work